

## Challenges in Cervical Screening

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**Background:** Cervical intra-epithelial neoplasia (CIN) is a pre-malignant condition of Cervix easily detectable by a PAP smear. If left untreated CIN progresses to cervical cancer. The objective of our study was to screen patients for CIN using PAP smear cytology & assess usefulness of opportunistic screening. Our aim was also to encourage routine Pap Smear screening of outdoor patients.

**Methods:** The study was conducted at department of Obstetrics & Gynecology Fatima Memorial Hospital Lahore from January 2004 to March 2006. PAP smear samples of 741 patients were analyzed for presence of CIN.

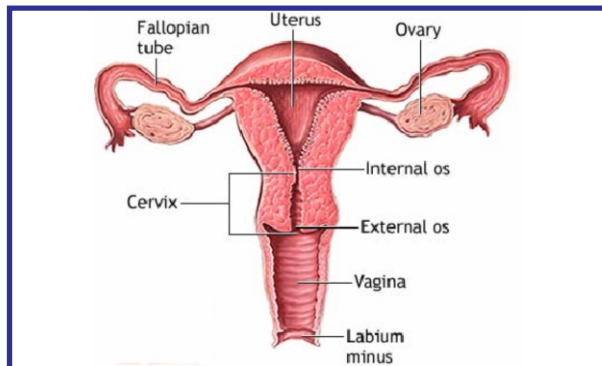
**Results:** Cervical dysplasia was seen in 14 patients and presence of CIN was not confirmed in these cases.

**Conclusion:** PAP smear is a simple & effective screening method for detection of CIN and prevention of cervical cancer. Considering the high incidence of cervical cancer in Pakistan, women should be encouraged to participate in screening & have regular PAP smears.

**Keywords:** Cervical intra-epithelial neoplasia (CIN), Dyskaryosis, PAP smear

### Introduction

Cervical intra-epithelial neoplasia (CIN) is the term used to describe the pre-cancerous or pre-invasive epithelial abnormality of cervix which is the lower part of the uterus.



**Fig 1:** Female genital tract.

CIN if left undetected and untreated slowly progresses to invasive cervical carcinoma. This is unfortunate as cervical cancer is a preventable disease and its pre-invasive form can be easily diagnosed and treated effectively without major surgery or radiotherapy. A simple test known as the Pap smear can detect pre-invasive disease years before onset of invasive cancer.<sup>1</sup> Pap smear is an easy to perform outpatient test. It samples the cells lining the transformation zone. The epithelial lining the cervical canal is columnar and as it moves outward towards the

ecto-cervix it gradually changes to squamous epithelium. This area of change is known as the transformation zone (TZ).

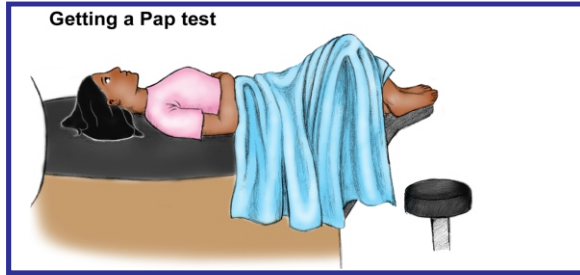
Results of a Pap smear in case of abnormality will show varying degrees of cellular dysplasia usually labelled as mild, moderate or severe dyskaryosis.<sup>2</sup> Another classification is Low grade Squamous Intraepithelial Neoplasia (LSIL) & High grade Squamous Intraepithelial Neoplasia (HSIL). Abnormal Squamous-Cell of Undetermined Significance (ASCUS) & Abnormal Glandular-Cell of Undetermined Significance AGCUS are also terms used to describe mild dysplasia. Presence of dysplasia requires a biopsy of cervix and histology to establish diagnosis of CIN.

### Materials and Methods

The objective of our study was to assess the usefulness of routine opportunistic screening of patients to detect CIN using PAP smear cytology. This is a prospective study conducted in the gynecology outpatient department of Fatima Memorial Hospital. Duration of study was two years starting from 16th January 2004. Patients were in age group of 22 to 72 years.

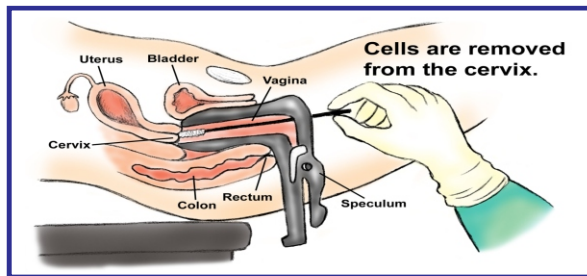
The selection criteria were random. However patients presenting with pelvic bleeding, heavy vaginal discharge, pregnancy, history of hysterectomy or presence of a cervical growth were excluded from the study.

Cervix was visualized using a cuscus speculum with patient in lithotomy position.



**Fig 2:** Correct position on an exam table for the Pap test.

No anti-septic or disinfectant was used. Pap smear was performed using a wooden Ayre's spatula. Sample of cells was taken from the transformation zone with the Ayre's spatula and smeared onto a glass slide; the slide was fixed using an alcohol based spray and sent to the laboratory for cytology.



**Fig 3:** The doctor removes cells from the cervix for testing.

**Results**

**The total number of Pap smear = 741**

- Satisfactory smears = 714 (96.35%)
- Inflammatory smears = 12 (1.62%)
- Abnormal Smears = 14 (1.88%)
- Unsatisfactory Smears = 1 (0.13%)

The abnormal smears were graded as Follows:-

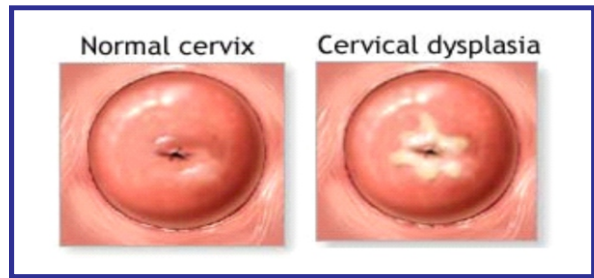
- Dyskaryosis grade I = 1 (0.13%)
- ASCUS\* = 12 (1.62%)
- AGCUS\*\* = 1 (0.13%)

\* (Abnormal Squamous- cells of undetermined

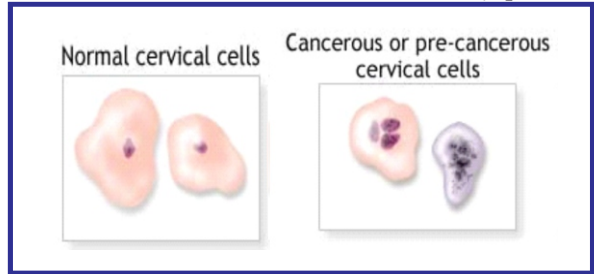
Significance)

\*\* (Abnormal Glandular cells of undetermined Significance)

Dyskaryosis 1, ASCUS & AGCUS are graded as mild abnormalities. However there is evidence to show



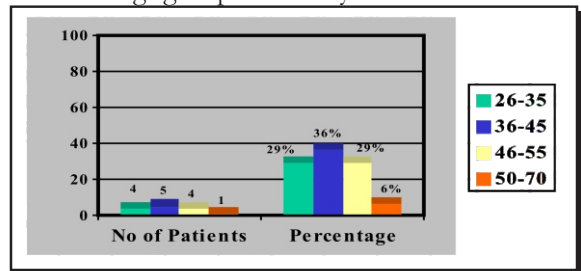
**Fig 4:** Shows normal cervix and cervical dysplasia.



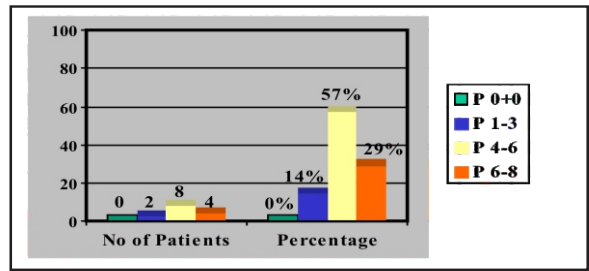
**Fig 5:** Shows normal cervical cells and cancerous or pre-cancerous cervical cells.

As per the new guidelines of British Society of Colposcopy & Cervical Pathology, colposcopy and cervical biopsy using the technique of Large Loopexcision of Transformation Zone (LLETZ) was performed in the 14 patients whose smears were reported as abnormal.4 Histopathology results did not confirm presence of CIN in these cases.5

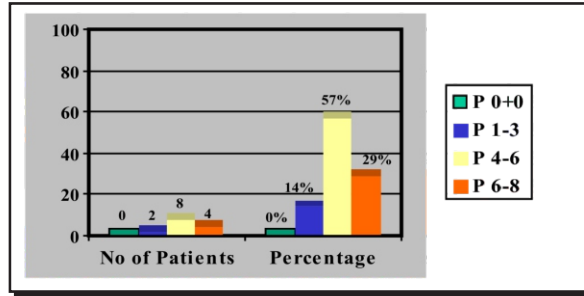
**Age:** This study shows that dysplasia is more common in age group of 35-55 years.



**Parity:** Result shows that dysplasia was seen mostly in patients of high parity.



**Socio-economic Status:** Result shows majority of patients were from lower middle class.



## Discussion

Cervical cancer is the third biggest killer of women in this country.<sup>6</sup> It is the second most common female malignancy worldwide with 200,000 new cases detected every year and 500,000 deaths per annum world over.<sup>7</sup> It occurs in epidemic proportions in developing world due to risk factors such as early marriages, multi-parity, lack of screening and low socio-economic status.<sup>8,9</sup> According to a recent report, cervical cancer is at number three on the list of causes of deaths from cancers of women in Pakistan. Although the prevalence is comparatively low in countries like Pakistan<sup>10</sup> with religious regulation of sexual behaviour and high prevalence of male circumcision, it is still significant since the other risk factors like multi-parity, HPV infection and poor sanitation and hygiene are prevalent. However our results show a low incidence of cervical dysplasia and no case of CIN was confirmed. This is partly due to the random selection and opportunistic screening. Patients coming to Fatima Memorial Hospital Outdoor Patient Department are from a certain socio-economic group which can be regarded as a low-risk population. Other factors are pit falls in the technique of Pap smear and laboratory analysis. Reliability of the smear depends on the technique employed to obtain the cytology specimen and the adequacy of its review by the cytologist. PAP test failure rate in diagnosing invasive cancer can be as

high as 50% emphasizing the need to biopsy any visible lesions of the cervix, even if associated with a normal PAP test.

A properly taken Pap smear must sample the cells of the transformation zone. In case transformation zone cells are not present in the sample it should be reported as unsatisfactory by the cytologist & needs to be repeated. Therefore availability of an expert cytologist and accurate feedback from the laboratory is essential.<sup>11</sup>

## Conclusion

Screening with Pap smears should become a routine in all teaching hospitals.

In a country like Pakistan mass screening may not be possible at present due to lack of resources, over-population and illiteracy but we can prevent invasive disease to some extent by intelligently utilizing our limited resources and man power.<sup>13</sup> Identification and screening of high risk populations can be an initial step.<sup>14</sup> Clinicians should counsel women regarding benefits of Pap smear and encourage them to participate in screening. National media can be used to educate women about the importance of this simple test. Establishment of a screening of high risk populations can be an initial step.<sup>14</sup>

Clinicians should counsel women regarding benefits of Pap smear and encourage them to participate in screening. National media can be used to educate women about the importance of this simple test. Establishment of a screening program in the country would be the first step in the right direction and should lead to a large community based study to establish more accurate figures for use in the healthcare system.

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